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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4241 (1990): Engineering metrology - Engineer's parallels [PGD 25: Engineering Metrology]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

**ENGINEERING METROLOGY — ENGINEER'S
PARALLELS — SPECIFICATION**

(First Revision)

भारतीय मानक

इंजीनियरी माप विज्ञान — इंजीनियरी समान्तरक — विशिष्ट

(पहला पुनरीक्षण)

UDC 531.717.88

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Price Group 1

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 13 March 1990, after the draft finalized by the Engineering Metrology Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This Indian Standard was originally published in 1967. This first revision has been brought out to align with the technical practices prevalent in the country.

In the preparation of this standard, considerable assistance has been derived from BS 906 (Part 1): 1972 'Engineer's parallels: Part 1 Metric units' issued by the British Standards Institution (BSI).

This standard includes sizes which are best suited for the use of parallels individually or in combination thereof to cover the entire range in small increments.

Squareness accuracy for working faces has been deleted as it does not affect the performance of the parallel and the box adjustable type parallels excluded from the purview of this standard, as they are normally not used.

Indian Standard
**ENGINEERING METROLOGY — ENGINEER'S
PARALLELS — SPECIFICATION**
(First Revision)

1 SCOPE

1.1 This standard covers the requirements for precision engineer's parallels of Grades 1 and 2, supplied always in pairs, and used in shop floor and for inspection purposes.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
2102 (Part 1) : 1980	General tolerances for dimensions and form and position: Part 1 General tolerances for linear and angular dimensions (<i>second revision</i>)
7018 (Part 1) : 1983	Technical supply conditions for gauges: Part 1 General (<i>first revision</i>)

3 TERMINOLOGY

3.1 For the purpose of this standard, working surfaces shall mean the four long sides of the parallel.

4 GRADES

4.1 The engineer's parallels shall be of two grades, Grade 1 for reference purposes and Grade 2 for workshop purposes.

5 DIMENSIONS AND TOLERANCES

5.1 Dimensions and tolerances of engineer's parallels of Grade 1 shall be as given in Table 1.

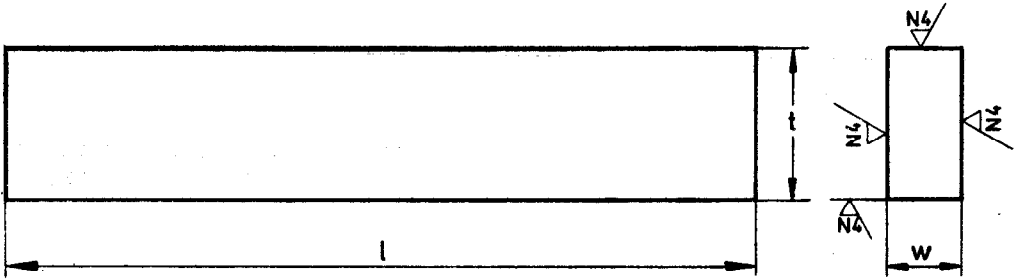
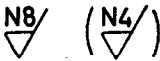
5.2 Dimensions and tolerances for engineer's parallels of Grade 2 shall be as given in Table 2.

5.3 Dimensional deviations for untoleranced dimensions shall be medium class according to IS 2102 (Part 1) : 1980.

5.4 For sizes 25 mm × 50 mm × 250 mm and above, suitable handles shall be provided.

Table 1 Dimensions and Tolerances for Engineer's Parallels (Grade 1)
(Clause 5.1)

All dimensions in millimetres.

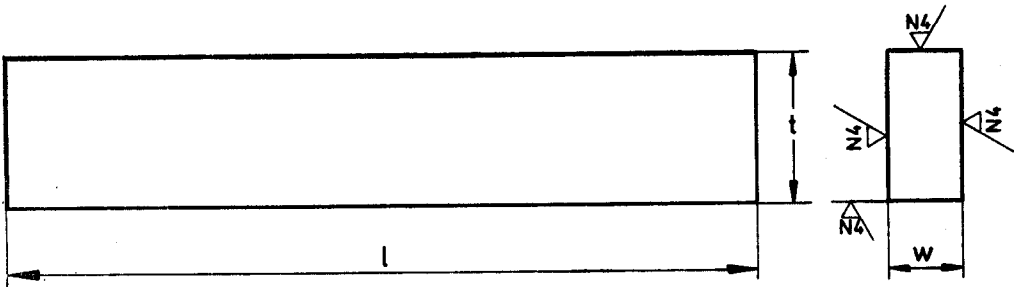


Nominal Size			Permissible Errors for Individual Parallel		Parallelism of <i>t</i> and <i>w</i>	Functional Requirement for a Pair Matching of <i>t</i> and <i>w</i> (with in)
<i>t</i>	<i>w</i>	<i>l</i>	Departure from Nominal <i>t</i> and <i>w</i>	Maximum Variation in <i>t</i> and <i>w</i>		
5	10	100	±0.005	0.002	0.004	0.006
10	20	125				
15	30	150				
20	40	200				
25	50	250	±0.010	0.003	0.006	0.010
30	60	300				

Table 2 Dimensions and Tolerances for Engineer's Parallels (Grade 2)
(Clause 5.2)

All dimensions in millimetres.

N8/ (N4/)



Nominal Size			Permissible Errors for Individual Parallel		Parallelism of t and w	Functional Requirement for a Pair Matching of t and w (with in)
t	w	l	Departure from Nominal t and w	Maximum Variation in t and w		
5	10	100	± 0.010	0.004	0.008	0.012
10	20	125				
15	30	150				
20	40	200				
25	50	250	± 0.020	0.006	0.012	0.020
30	60	300				
40	80	350	± 0.025	0.007	0.014	0.020
50	100	400	± 0.030	0.008	0.016	0.025

6 MATERIAL AND HARDNESS

6.1 The engineer's parallels of both grades shall be made of steel conforming to IS 7018 (Part 1) : 1983.

6.2 Hardness for engineer's parallel shall be as given in IS 7018 (Part 1) : 1983.

7 FINISH

7.1 The engineers' parallels shall be finished ground or preferably lapped on all four working sides.

7.2 All sharp edges shall be rounded off or chamfered to 1 mm \times 45° Max.

8 DESIGNATION

8.1 Engineer's parallel of Grade 1 of size 15 mm \times 30 mm \times 150 mm shall be designated as:

Engineer's Parallel 15 \times 30 \times 150 Grade 1, IS 4241

8.2 Engineer's parallel of Grade 2 of size 40 mm \times 80 mm \times 350 mm shall be designated as:

Engineer's Parallel 40 \times 80 \times 350 Grade 2, IS 4241

9 MARKING

9.1 Each engineer's parallel shall be marked legibly and permanently. Marking shall not protrude above the working surfaces of engineer's parallels. Each engineer's parallel shall be marked with following particulars:

- a) Nominal size,
- b) Grade,
- c) Indication of source of manufacture, and
- d) Number of this standard.

9.2 Standard Marking

The engineer's parallel may also be maked with Standard Mark, details of which may be obtained from Bureau of Indian Standards.

10 PRESERVATION AND PACKING

10.1 The engineer's parallels shall be protected against climatic conditions by suitable non-corrosive treatment and packed in a suitable protective box.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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